LISTING OF CLAIMS:

Claims 1-29 are pending in this application. The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) An image sensing method comprising:

the zooming step of performing zooming operation;

the focusing step of performing focusing operation during the zooming operation;

the shutter speed control step of controlling a timing of a charge storage time of an image sensing element; and

the control step of controlling to change a zoom speed in the zooming step in accordance with a shutter speed so that the focusing operation is able to follow an object during the zooming operation.

2. (Original) The method according to claim 1, wherein the control step comprises controlling to decrease the zoom speed in the zooming step when the shutter speed is not more than a predetermined value.

3. (Currently Amended) An image sensing apparatus comprising:

a zooming ~~means for performing~~ device adapted to perform zooming operation;

a focusing device adapted to perform focusing operation;

a shutter speed control ~~means for controlling~~ device adapted to control a timing of a charge storage time of an image sensing element; and

a control ~~means for controlling~~ device adapted to control to change a zoom speed of said zooming ~~means~~ device in accordance with a shutter speed so that the focusing operation is able to follow an object during the zooming operation.

4. (Currently Amended) The apparatus according to claim 3, wherein said

control ~~means~~ device controls to decrease the zoom speed of said zooming ~~means~~ device when the shutter speed is not more than a predetermined value.

5. (Currently Amended) An image sensing method comprising:

the zooming step of performing zooming operation using a zoom lens;

the focus adjustment step of correcting movement of a focal plane upon movement of said zoom lens by using a focus lens;

the driving step of independently moving said zoom lens and said focus lens parallel to an optical axis;

the selection step of selecting a charge storage time of an image sensing element;

the shutter speed control step of controlling a timing of the charge storage time of said image sensing element; and

the control step of controlling to change a zoom speed in the zooming step in accordance with a shutter speed so that the focal plane can track an object in the focus adjustment step during the zooming operation.

6. (Original) The method according to claim 5, wherein the control step comprises controlling to decrease the zoom speed in the zooming step when the shutter speed is not more than a predetermined value.

7. (Currently Amended) An image sensing apparatus comprising:

a zooming ~~means for performing~~ device adapted to perform zooming operation using a zoom lens;

a focus adjustment ~~means for correcting~~ device adapted to correct movement of a focal plane upon movement of said zoom lens by using a focus lens;

a driving ~~means for independently moving~~ device adapted to independently move

said zoom lens and said focus lens parallel to an optical axis;

an image sensing element;

a selection ~~means for selecting~~ device adapted to select a charge storage time of said image sensing element;

a shutter speed control ~~means for controlling~~ device adapted to control a timing of the charge storage time of said image sensing element; and

a control ~~means for controlling~~ device adapted to control to change a zoom speed of said zooming ~~means~~ device in accordance with a shutter speed so that the focus adjustment device can correct movement of the focal plane following the movement of said zoom lens during the zooming operation.

8. (Currently Amended) The apparatus according to claim 7, wherein said control ~~means~~ device controls to decrease the zoom speed of said zooming ~~means~~ device when the shutter speed is not more than a predetermined value.

9. (Currently Amended) A storage medium storing a control program for controlling an image sensing apparatus including a zooming ~~means for performing~~ device adapted to perform a zooming operation, a focusing device adapted to perform a focusing operation, a shutter speed control ~~means for controlling~~ device adapted to control a timing of a charge storage time of an image sensing element, and a control ~~means for controlling~~ device adapted to control a zoom speed of said zooming ~~means~~ device, wherein the control program has a control module for the step of controlling to change the zoom speed of said zooming ~~means~~ device in accordance with a shutter speed so that the focusing operation is able to follow an object during the zooming operation.

10. (Currently Amended) The storage medium according to claim 9, wherein

the control program has a control module for the control step of controlling to decrease the zoom speed of said zooming ~~means~~ device when the shutter speed is not more than a predetermined value.

11. (Currently Amended) A storage medium storing a control program for controlling an image sensing apparatus comprising a zooming ~~means for performing~~ device adapted to perform zooming operation using a zoom lens, a focus adjustment ~~means for correcting~~ device adapted to correct movement of a focal plane upon movement of said zoom lens by using a focus lens, a driving ~~means for independently moving~~ device adapted to independently move said zoom lens and said focus lens parallel to an optical axis, an image sensing element, a selection ~~means for selecting~~ device adapted to select a charge storage time of said image sensing element, a shutter speed control ~~means for controlling~~ device adapted to control a timing of the charge storage time of said image sensing element, and a control ~~means for controlling~~ device adapted to control a zoom speed of said zooming ~~means~~ device, wherein the control program has a control module for the step of controlling to change the zoom speed of said zooming ~~means~~ device in accordance with a shutter speed so that the focus adjustment device can correct movement of the focal plane following the movement of said zoom lens during the zooming operation.

12. (Currently Amended) The storage medium according to claim 11, wherein the control program has a control module for the control step of controlling to decrease the zoom speed of said zooming ~~means~~ device when the shutter speed is not more than a predetermined value.

13. (Currently Amended) An image sensing apparatus having an arrangement which can maintain an in-focus state by correcting a displacement of a focal plane during

zooming operation, comprising:

a signal detection ~~means for extracting~~ device adapted to extract a high-frequency component from a video signal obtained by photographing an object, and detecting a sharpness signal;

a zoom speed detection ~~means for detecting~~ device adapted to detect a speed of the zooming operation; and

an evaluation value calculation ~~means for changing~~ device adapted to change a time during which the sharpness signals are averaged in accordance with the speed of the zooming operation, during the zooming operation, ~~in accordance with the speed of the zooming operation,~~ and calculating a focus evaluation value during the zooming operation in the set averaging time.

14. (Currently Amended) The apparatus according to claim 13, wherein said evaluation value calculation ~~means~~ device calculates the focus evaluation value in accordance with the speed of the zooming operation by shortening the averaging time of the sharpness signals when the zoom speed is high, and prolonging the averaging time of the sharpness signals when the zoom speed is low.

15. (Currently Amended) The apparatus according to claim 13, wherein said evaluation value calculation ~~means~~ device includes an averaging time table set in correspondence with various zoom speeds, determines the various zoom speeds by referring to the averaging time, and calculates the focus evaluation value.

16. (Currently Amended) An image sensing apparatus having an arrangement which can maintain an in-focus state by correcting a displacement of a focal plane during zooming operation, comprising:

a signal detection ~~means for extracting~~ device adapted to extract a high-frequency component from a video signal obtained by photographing an object, and detecting a sharpness signal;

a signal extraction ~~means for extracting~~ device adapted to extract a luminance signal from the video signal obtained by photographing the object; and

an evaluation value calculation ~~means for changing~~ device adapted to change a time during which the sharpness signals are averaged in accordance with an object illuminance obtained from the luminance signal, during the zooming operation, ~~in accordance with an object illuminance obtained from the luminance signal,~~ and calculating a focus evaluation value during the zooming operation in the set averaging time.

17. (Currently Amended) The apparatus according to claim 16, wherein said evaluation value calculation ~~means~~ device calculates the focus evaluation value in accordance with the object illuminance by shortening the averaging time of the sharpness signals when the object illuminance is high, and prolonging the averaging time of the sharpness signals when the object illuminance is low.

18. (Currently Amended) An image sensing apparatus having an arrangement which can maintain an in-focus state by correcting a displacement of a focal plane during zooming operation, comprising:

a signal detection ~~means for extracting~~ device adapted to extract a high-frequency component from a video signal obtained by photographing an object, and detecting a sharpness signal;

a shake detection ~~means for detecting~~ device adapted to detect a shake of said image sensing apparatus; and

an evaluation value calculation ~~means for changing~~ device adapted to change a time during which the sharpness signals are averaged in accordance with information from said shake detection device, during the zooming operation, ~~in accordance with information from said shake detection means,~~ and calculating a focus evaluation value during the zooming operation in the set averaging time.

19. (Currently Amended) The apparatus according to claim 18, wherein said evaluation value calculation ~~means~~ device calculates the focus evaluation value by shortening the averaging time of the sharpness signals when no shake is detected by said shake detection ~~means~~ device, and prolonging the averaging time of the sharpness signals when a shake is detected.

20. (Currently Amended) An image sensing apparatus comprising:

a first lens group for zooming operation;

a second lens group for correcting movement of a focal plane during movement of said first lens group;

a signal detection ~~means for extracting~~ device adapted to extract a high-frequency component from a video signal obtained by photographing an object, and detecting a sharpness signal;

a zoom speed detection ~~means for detecting~~ device adapted to detect a speed of the zooming operation;

a storage ~~means for storing~~ device adapted to store information of a focus position of said second lens group relative to a position of said first lens group in correspondence with an object distance;

a moving speed calculation ~~means for obtaining~~ device adapted to obtain a standard moving speed of said second lens group upon movement of said first lens group on the

basis of the information stored in said storage ~~means~~ device;

a speed addition ~~means for adding~~ device adapted to add a correction speed to the standard moving speed of said second lens group, obtained by said moving speed calculation ~~means~~ device, during the zooming operation; and

a focus control ~~means for changing~~ device adapted to change a time during which the sharpness signals are averaged in accordance with the speed of the zooming operation, during the zooming operation, ~~in accordance with the speed of the zooming operation,~~ calculating a focus evaluation value during the zooming operation in the set averaging time, and changing the correction speed to be added to the standard moving speed in accordance with a magnitude of the calculated focus evaluation value.

21. (Currently Amended) The apparatus according to claim 20, wherein said focus control ~~means~~ device calculates the focus evaluation value in accordance with the speed of the zooming operation by shortening the averaging time of the sharpness signals when the zoom speed is high, and prolonging the averaging time of the sharpness signals when the zoom speed is low.

22. (Currently Amended) The apparatus according to claim 20, wherein said focus control ~~means~~ device includes an averaging time table set in correspondence with various zoom speeds, determines the various zoom speeds by referring to the averaging time, and calculates the focus evaluation value.

23. (Currently Amended) An image sensing apparatus comprising:

a first lens group for zooming operation;

a second lens group for correcting movement of a focal plane during movement of said first lens group;

a signal detection ~~means for extracting~~ device adapted to extract a high-frequency component from a video signal obtained by photographing an object, and detecting a sharpness signal;

a signal extraction ~~means for extracting~~ device adapted to extract a luminance signal from the video signal obtained by photographing the object;

a storage ~~means for storing~~ device adapted to store information of a focus position of said second lens group relative to a position of said first lens group in correspondence with an object distance;

a moving speed calculation ~~means for obtaining~~ device adapted to obtain a standard moving speed of said second lens group upon movement of said first lens group on the basis of the information stored in said storage ~~means~~ device;

a speed addition ~~means for adding~~ device adapted to add a correction speed to the standard moving speed of said second lens group, obtained by said moving speed calculation ~~means~~ device, during the zooming operation; and

a focus control ~~means for changing~~ device adapted to change a time during which the sharpness signals are averaged in accordance with an object illuminance obtained from the luminance signal, during the zooming operation, ~~in accordance with an object illuminance obtained from the luminance signal,~~ calculating a focus evaluation value during the zooming operation in the set averaging time, and changing the correction speed to be added to the standard moving speed in accordance with a magnitude of the calculated focus evaluation value.

24. (Currently Amended) The apparatus according to claim 23, wherein said focus control ~~means~~ device calculates the focus evaluation value in accordance with the object illuminance by shortening the averaging time of the sharpness signals when the object

illuminance is high, and prolonging the averaging time of the sharpness signals when the object illuminance is low.

25. (Currently Amended) An image sensing apparatus comprising:

a first lens group for zooming operation;

a second lens group for correcting movement of a focal plane during movement of said first lens group;

a signal detection ~~means for extracting~~ device adapted to extract a high-frequency component from a video signal obtained by photographing an object, and detecting a sharpness signal;

a shake detection ~~means for detecting~~ device adapted to detect a shake of said image sensing apparatus;

a storage ~~means for storing~~ device adapted to store information of a focus position of said second lens group relative to a position of said first lens group in correspondence with an object distance;

a moving speed calculation ~~means for obtaining~~ device adapted to obtain a standard moving speed of said second lens group upon movement of said first lens group on the basis of the information stored in said storage ~~means~~ device;

a speed addition ~~means for adding~~ device adapted to add a correction speed to the standard moving speed of said second lens group, obtained by said moving speed calculation ~~means~~ device, during the zooming operation; and

a focus control ~~means for changing~~ device adapted to change a time during which the sharpness signals are averaged in accordance with information from said shake detection device, during the zooming operation, ~~in accordance with information from said shake detection~~

~~means,~~ calculating a focus evaluation value during the zooming operation in the set averaging time, and changing the correction speed to be added to the standard moving speed in accordance with a magnitude of the calculated focus evaluation value.

26. (Currently Amended) The apparatus according to claim 25, wherein said focus control ~~means~~ device calculates the focus evaluation value by shortening the averaging time of the sharpness signals when no shake is detected by said shake detection ~~means~~ device, and prolonging the averaging time of the sharpness signals when a shake is detected.

27. (Currently Amended) A lens control method used in an image sensing apparatus including a first lens group for zooming operation and a second lens group for correcting movement of a focal plane during movement of said first lens group and adapted to control movement of said second lens group so as to maintain an in-focus state by correcting a displacement of a focal plane upon movement of said first lens group during zooming operation, comprising the steps of:

creating an averaging sharpness ~~signals corresponding to a predetermined time, each~~ signal generated by extracting a high-frequency component from a video signal obtained by photographing an object, and calculating a focus evaluation value for determining a moving speed of said second lens group on the basis of the averaged sharpness signal; and

changing the averaging time of the sharpness ~~signals~~ signal during the zooming operation in accordance with a speed of the zooming operation.

28. (Currently Amended) A lens control method used in an image sensing apparatus including a first lens group for zooming operation and a second lens group for correcting movement of a focal plane during movement of said first lens group and adapted to control movement of said second lens group so as to maintain an in-focus state by correcting a

displacement of a focal plane upon movement of said first lens group during zooming operation, comprising the steps of:

creating an averaging sharpness ~~signals corresponding to a predetermined time, each~~ signal generated by extracting a high-frequency component from a video signal obtained by photographing an object, and calculating a focus evaluation value for determining a moving speed of said second lens group on the basis of the averaged sharpness signal; and

changing the averaging time of the sharpness ~~signals~~ signal during the zooming operation in accordance with an object illuminance obtained from a luminance signal in the video signal obtained by photographing the object.

29. (Currently Amended) A lens control method used in an image sensing apparatus including a first lens group for zooming operation and a second lens group for correcting movement of a focal plane during movement of said first lens group and adapted to control movement of said second lens group so as to maintain an in-focus state by correcting a displacement of a focal plane upon movement of said first lens group during zooming operation, comprising the steps of:

creating an averaging sharpness ~~signals corresponding to a predetermined time, each~~ signal generated by extracting a high-frequency component from a video signal obtained by photographing an object, and calculating a focus evaluation value for determining a moving speed of said second lens group on the basis of the averaged sharpness signal; and

changing the averaging time of the sharpness ~~signals~~ signal during the zooming operation in accordance with information from a shake detection ~~means for detecting~~ device adapted to detect a shake of said image sensing apparatus.